2879

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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C. Healion

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Applicant	:	Bong-Woo Lee
Application No.	:	09/363,121
Filed	:	July 28, 1999
Title	:	CATHODE RAY TUBE
Grp./Div.	:	2879
Examiner	:	Haynes, M.
Docket No.	:	35399/RJP/Y35

RESPONSE

Assistant Commissioner for Patents
Washington, D.C. 20231

Post Office Box 7068
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September 27, 2001

Commissioner:

In response to the Office Action of July 6, 2001, please reconsider and reexamine the above-identified application pursuant to the remarks set forth hereinbelow.

REMARKS

The Examiner has rejected Claims 1 and 2 35 U.S.C. §103 as being unpatentable over Tsuneta et al. in view of Kim. The Examiner states that it would have been obvious to "uniformly (wherein, the thickness of the coating at the corners is equal to the thickness of the coating on the vertical and horizontal walls) coat the inner surface of the funnel of Tsuneta et al., which includes the corners as well as the vertical and horizontal walls for the purpose [of] having the coating function as a condenser and properly preventing unwanted internal discharging when the CRT is turned on or off (due

to non-uniform coating of the graphite conductive layer) as taught by Kim."

However, the Applicant submits that there is no suggestion to combine the references as suggested by the Examiner and result in the invention as set forth in Claims 1 and 2.

The Applicant's Claim 1 specifically calls for (underlining added for emphasis) ... A cathode ray tube comprising: ... a funnel formed between the panel and the neck, and having a substantially rectangular cone portion contiguous to the neck ... an inner graphite layer disposed on an inner surface of the funnel to form a path for transmission of the voltage, wherein the inner graphite layer satisfies the following condition: $0.9 \leq Td / Th \leq 1.36$ where Td is an approximate thickness of the inner graphite layer on each inside corner of the cone portion, and Th is an approximate thickness of the inner graphite layer disposed on inside horizontal walls of the cone portion.

Similarly, the Applicant's Claim 2 specifically calls for (underlining added for emphasis) ... A cathode ray tube comprising: ... a funnel formed between the panel and the neck, and having a substantially rectangular cone portion contiguous to the neck ... an inner graphite layer disposed on an inner surface of the funnel to form a path for transmission of the voltage, ... wherein the inner graphite layer satisfies the following condition: $0.9 \leq Td / Tv \leq 1.36$ where Td is an approximate thickness of the inner graphite layer on each inside corner of the cone portion, and Tv is an approximate thickness of the inner graphite layer disposed on inside vertical walls of the cone portion.

As such, the present invention provides for a CRT having an inner graphite layer disposed on an inner surface of a CRT funnel to form a path for transmission of high voltage, the inner graphite layer having predetermined relationships between the thickness of the inner graphite layer disposed on inside corners of the CRT funnel cone portion (Td) and the thickness of the inner graphite

layer disposed on inside horizontal walls of the CRT funnel cone portion (Th), and between the thickness of the inner graphite layer disposed on inside corners of the CRT funnel cone portion (Td) and the thickness of the inner graphite layer disposed on inside vertical walls of the cone portion (Tv). In particular, the predetermined relationships are set forth as $0.9 \leq Td / Th \leq 1.36$ and $0.9 \leq Td / Tv \leq 1.36$.

On the other hand, the Applicant submits that, while Tsuneta et al. may teach a CRT having a funnel cone portion and while Kim may teach having a graphite-based inner layer on inside walls of a CRT funnel cone portion, there is no suggestion to combine the references to result in the invention as set forth in Claims 1 and 2, and in particular, as to predetermined relationships between the thickness of the inner graphite layer disposed on inside corners of the CRT funnel cone portion (Td) and the thickness of the inner graphite layer disposed on inside horizontal walls of the CRT funnel cone portion (Th), and between the thickness of the inner graphite layer disposed on inside corners of the CRT funnel cone portion (Td) and the thickness of the inner graphite layer disposed on inside vertical walls of the cone portion (Tv), the predetermined relationships being set forth as $0.9 \leq Td / Th \leq 1.36$ and $0.9 \leq Td / Tv \leq 1.36$.

The Examiner contends that "uniformly" coating as taught by Kim means that the thickness of the coating at the corners is equal to the thickness of the coating on the vertical and horizontal walls and that uniform coating of the inner surface of the funnel of Tsuneta et al., includes the corners as well as the vertical and horizontal walls.

The Applicant respectfully disagrees. While Kim mentions "uniform" and "uniformly deposited" the Applicant submits that Kim is referring to consistency of the layered mixture of the graphite and the two oxides and not the thickness of the layered mixture wherever the layered mixture is applied. This is further shown by

Kim's disregard of the thickness of the layered mixture in the corners of the funnel as can be clearly seen in Figure 3 when observing the "edge area of a conductive coating" as depicted in the figure. It can be readily seen that the corner thickness is much larger than the horizontal and vertical thicknesses of the conductive coating.

As such, the Applicant submits that the invention as specifically claimed in Claims 1 and 2, and in particular the aspects of having predetermined thickness relationships of $0.9 \leq Td / Th \leq 1.36$ and $0.9 \leq Td / Tv \leq 1.36$, is neither taught, described or suggested in Tsuneta et al., even in view of Kim.

Therefore, in view of the above remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome.

Respectfully submitted,

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